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PHYSICIAN WORK/INVESTMENT AND DEFENSIVE MEDICINE IN A DECADE OF TORT REFORM

Jackson Williams*

In the early part of the past decade, physicians mounted lobbying campaigns for “tort reform” across the United States, promising that lower liability premiums would lead to improved patient access through doctors’ continuation or expansion of their practices and to reduced expenditures on “defensive medicine.” Laws capping malpractice damages were passed in ten states between 2002 and 2005, allowing a natural experiment for this study to determine whether an improved liability climate for doctors increased access or reduced health care expenditures attributable to defensive ordering of tests.

BACKGROUND

The extensive body of law known as tort law governs reparations for injuries caused by negligence.¹ Medical negligence, or malpractice, occurs when a provider’s deviation from the reasonable standard of care results in injury to patients.² Physicians bristle at allegations of medical malpractice for many reasons, some of which relate to the personal affront and anguish they feel when non-physicians question the quality of their care, and others of which relate to the economic consequences, including the expense of liability insurance premiums.³ “Tort reform” refers to legislation that reduces providers’ liability.⁴ The most prominent of such measures caps the amount of damages that may be awarded.

Proponents of tort reform advance two principal arguments as to its policy benefits. First, they assert that, since liability increases the marginal cost of treating a patient, it reduces physician labor market participation. While not explicitly stated as such, this is a classic “supply-side”

argument, analogizing liability to a tax⁵ that will “reduce the payoff people derive from work . . . [creating incentives to] opt out of the labor force . . . take more vacation time, retire earlier . . . forgo overtime opportunities [or] . . . promising but risky business opportunities,”⁶ or drive physicians into other jurisdictions where the “tax” is lower.⁷ More typically, it is characterized as a dynamic that reduces patients’ access to care. In this paper, I will refer to this as the “access thesis.”

The second argument is that tort law, intended to deter negligence, can actually “over-deter,” resulting in “a deviation from sound medical practice that is induced primarily by a threat of liability.”⁸ I will refer to this as the “defensive medicine thesis.” Studdert and colleagues note that while defensive medicine “has been reported widely in the United States and abroad[,]... its prevalence and characteristics remain controversial.”⁹

Defensive medicine has been prominent in the debate over “tort reform” as some advocates have argued that reducing liability will help contain the staggering growth in health care costs. In a 2002 report prepared for President George W. Bush, Department of Health and Human Services Assistant Secretary for Planning and Evaluation (ASPE) stated, “limiting unreasonable awards for non-economic damages could reduce health care costs by 5-9 percent without adversely affecting quality of care . . . sav[ing] \$60-108 billion in health care costs each year.”¹⁰

The theory behind the ASPE’s argument may be stated as follows: much of defensive medicine results from “assurance behavior” by doctors intending to “persuad[e] the legal system that the standard of care was met.”¹¹ Assurance behavior will primarily manifest itself in the ordering of tests for which the costs exceed the likely benefit to the patient, although other steps, such as admitting a patient to the hospital, may also result. This of course refers to “positive” defensive medicine; over-deterrence could also result in “negative” defensive medicine, in which

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a physician declines to administer a possibly risky treatment to patients. This, presumably, would reduce health care expenditures.

The amount of defensive medicine occurring is said to vary in proportion to the amount of “malpractice pressure” physicians face; therefore, it is argued, a decrease in malpractice pressure, such as that resulting from adoption of tort reform laws, should reduce utilization.¹²

Research investigating the defensive medicine thesis typically looks at utilization.¹³ Most research investigating the access thesis has focused on the supply of physicians in states that have adopted tort reform relative to states that have not.¹⁴

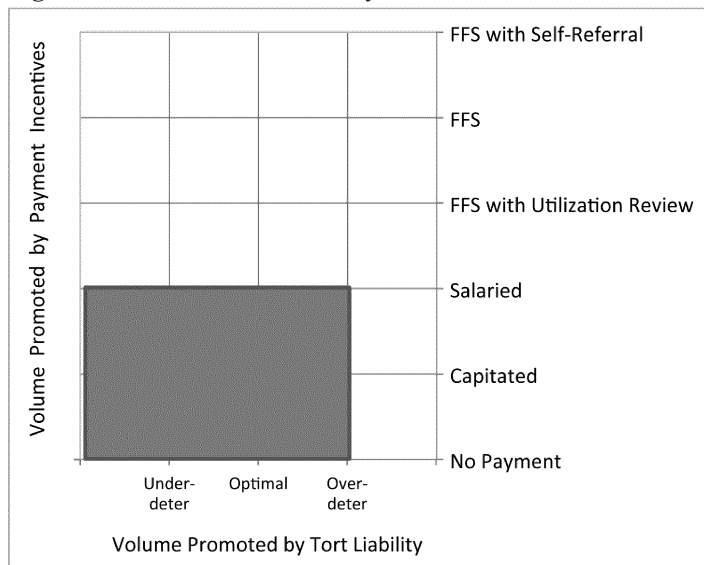
But as the General Accounting Office (GAO) noted, utilization is also an indicator of access.¹⁵ Other than GAO, Helland and Showalter appear to be the only authors who have investigated the access thesis by looking at physician work instead of state-by-state physician supply. They note that “the link between liability risk and physician labor hours...will [likely] be related to the standard notion of defensive medicine because additional tests and procedures would probably require at least some additional hours of physician labor.”¹⁶ These papers have touched upon a fundamental contradiction between the access thesis and the defensive medicine thesis: while the defensive medicine thesis predicts tort reform will reduce utilization, the access thesis implies tort reform will result in increased utilization. Both cannot be true.

The next figures graph a more realistic depiction of access and utilization. On the x axis is plotted the amount of utilization motivated by tort deterrence. On the y axis is plotted the amount of utilization motivated by payment incentives. The shaded area represents volume and intensity of medical care¹⁷ which, as noted, is also equivalent to “access” to care. The shading in Figure 1 depicts the defensive medicine scenario painted by tort reform proponents: volume and intensity is too high due to over-deterrence. But the fallacy in this scenario is that the defensive medicine thesis implicitly views payment incentives as neutral, when in reality that is seldom the case.

Generally speaking, physicians can be paid by three different methods. In a capitated model, physicians are paid a fixed amount for the care of each patient assigned to them, creating an incentive to be thrifty, if not parsimonious, in the amount of care they provide or order. In a fee-for-service setting, physicians are paid “by the piece”—the more they do, the more they earn.¹⁸

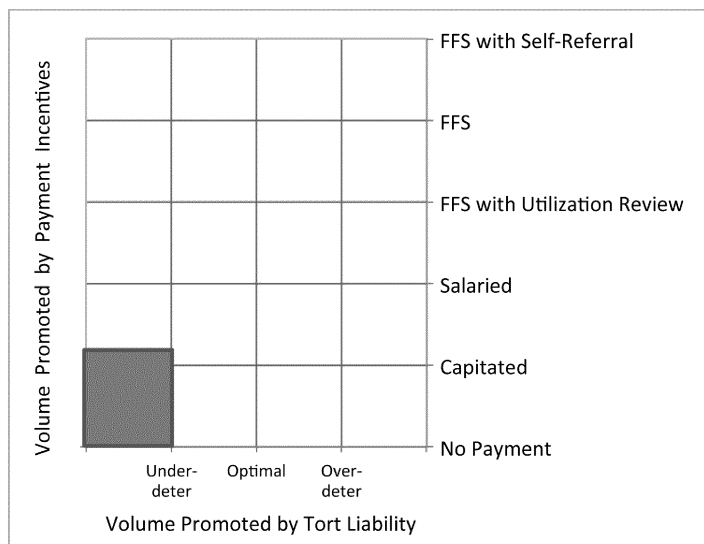
The assumption of neutral incentives is represented here by y equaling the level of utilization produced by salaried physicians, who are paid a fixed amount to work a fixed number of hours. In fact, a supply-side stimulus would have little effect if payment incentives were neutral. The access thesis assumes that physicians will work more and invest more in their practices because they will keep more of their earnings. This, in turn, assumes that physicians are paid on a fee-for-service basis—the contention heard in the debate was that physicians would “close their practices,” not resign from salaried positions with employers that provide malpractice coverage.¹⁹

Figure 1: Tort Incentives and Payment Incentives



It is worth noting here that, immediately prior to the first decade of the twenty-first century, policymakers very much conceptualized payment incentives and tort incentives interacting. Figure 2 depicts a scenario of volume and intensity of (or access to) medical care portrayed by advocates during the heyday of managed care. Advocates, including physicians, contended that the incentive for stinting on care promoted by capitation was reinforced by inadequate deterrence, specifically, the inability of patients to sue HMOs for full damages caused by denial of care.²⁰ Volume motivated by payment incentives (the y axis) moves downward; volume motivated by tort incentives (the x axis) recedes to the left. During the debate over the “Patient’s Bill of Rights,” it was argued that tort liability needed strengthening to achieve the correct volume of and access to care.²¹

Figure 2: The Managed Care Backlash Scenario



In any event, we know that most physicians’ income is earned in a fee-for-service setting and, therefore, payment incentives are decidedly not neutral: the more that is done, the more the doctor earns. Therefore, we would expect a supply-side stimulus to

stimulate supply to the maximum extent permissible. Because that maximum extent, at least in the Medicare program, permits physician ownership of and self-referral to ancillary services,²² the stimulus can extend to the very activities that the defensive medicine thesis predicts should be reduced by tort reform: imaging and other diagnostic services. A recent study by the Center for Studying Health System Change found that 17.4 percent of community-based physicians have an ownership interest in advanced imaging equipment.²³ When we think of increasing access by adding or retaining one hundred physicians in a state, we must consider the likelihood that nearly a fifth of those physicians will be adding substantially to costly diagnostic services utilization. The defensive medicine thesis assumes all physician activity moving along the x axis, while most mainstream health policy experts are concerned about the movement along the y axis.

DEFENSIVE MEDICINE, GROWTH IN IMAGING, AND GROWTH IN HEALTH CARE COSTS

The defensive medicine thesis has gained more serious attention from policymakers as they grapple with rising health care costs. PriceWaterhouseCoopers (PWC) estimated that in 2005 “more intensive diagnostic testing” accounted for only 8.8 percent of the overall increase in health insurance premiums.²⁴ Interestingly, PWC suggested that some of this rise was attributable to defensive medicine in spite of the decrease in malpractice liability that had occurred over the preceding three years. With regard to Medicare, the Medicare Payment Advisory Commission noted:

Between 2002 and 2007, the volume per beneficiary of imaging services paid under Medicare’s physician fee schedule grew nearly twice as fast as all physician services. Although the rate of growth slowed between 2006 and 2007, there are reasons to be concerned that some of the increased use in recent years may not be appropriate, which contributes to Medicare’s growing financial burden on taxpayers and beneficiaries. First, the Government Accountability Office found an almost eightfold variation in per beneficiary spending on in-office imaging services across the states. Second, there is evidence that costly imaging services are mispriced under the physician fee schedule, thereby creating financial incentives to provide more imaging. Rapid growth in imaging may also be driven by technological innovation, defensive medicine, inconsistent adherence to clinical guidelines, an increase in imaging performed in physician offices, and other factors.²⁵

Studdert et al., surveying Pennsylvania physicians in 2003, found that in five specialties—emergency medicine, general surgery, orthopedic surgery, neurosurgery and obstetrics/gynecology—at least half of responding physicians “often” ordered medically unnecessary tests to fend off possible malpractice claims. These respondents, when asked to categorize their most recent act of defensive medicine, most frequently cited the ordering of a CT, MRI or X-ray. Physicians in these specialties reported ordering such imaging in between 41 to 86 percent of these instances.²⁶

Recent research has attempted to quantify the effects of radiation exposure from imaging, with investigators warning that unnecessary imaging may be a significant threat to patient safety. Berrington and Darby estimate that some 5,965 cases of cancer occur in America each year as a result of diagnostic x-ray exposure.²⁷ Brenner and Hall pinpoint computed tomography as an increasing source of radiation exposure.²⁸ They note that CT scans subject organs to about fifty times as large a radiation dose as standard radiography, and that for most patients undergoing CT of the abdomen or pelvis, more than one scan is taken the same day.²⁹ They estimate that between 1.5 and 2 percent of all cancers occurring in the United States may be attributable to radiation from CT studies.³⁰ Brenner and Hall conclude that while “most diagnostic CT scans are associated with very favorable ratios of benefit to risk . . . a problem arises when CT scans are requested in the practice of defensive medicine.”³¹

It is important to note that, according to Berrington and Darby, diagnostic radiation exposure is as high or higher in countries with much less rigorous tort systems than the United States, and thus Brenner and Hall may overestimate the portion of unnecessary imaging attributable to defensive medicine. Nonetheless, it is also important that policymakers obtain a clearer picture of the role malpractice fear may play in this phenomenon.

The concept of defensive medicine has been controversial. “Most studies of the cost of defensive medicine are based on physicians’ responses to questions about their underlying motivation for providing certain procedures and services.”³² There has been empirical disagreement over the documentation of its existence in actual utilization data. Concerns have been expressed that the Stanford study, which the ASPE relied upon in making its forecast,³³ was inaccurate—the Congressional Budget Office (CBO) first reported that it was unable to replicate that study’s findings.³⁴ More recently, however, CBO has forecast that tort reforms could result in an “indirect reduction [of health care expenditures] of 0.3 percent from slightly less utilization of health care services,”³⁵ but also noted the same results could be obtained through managed care techniques such as utilization review.

Two of the more recent peer-reviewed studies illustrate the difficulty in teasing out and quantifying the effects of over-deterrence and any reductions that may come from tort reform. Hellinger and Encinosa used a panel of state cross-sectional health expenditure data at four points in time to quantify the effects of state adoption of damage caps. They found that adoption of a cap reduced expenditures by around 3.31 percent.³⁶ This study has been described as having “methodological weaknesses.”³⁷ A key methodological question is whether “malpractice pressure” can be captured in a cross-sectional research design solely by a dichotomous variable indicating adoption of a cap. Malpractice pressure will also be felt in the frequency and severity of malpractice claims, which vary considerably from state to state and vary independently based upon a state’s litigiousness in addition to state laws restricting lawsuits. For instance, Hellinger and Encinosa’s dummy variable assigns equal malpractice pressure to Minnesota and Illinois, despite the fact that during their study

period, Illinois ranked first in size of physician payments to plaintiffs whereas Minnesota ranked forty-first and despite Illinois having a rate of paid claims that was double Minnesota's.

Meanwhile, the results seem implausible. Hellinger and Encinosa's coefficient for physician supply implies that a damage cap achieves a reduction in expenditures equivalent to the elimination of thirty-four physicians per 100,000 residents, which is equal to the difference in workforces between a state near the national midpoint and a state at the top of the bottom quintile; in addition, a Dartmouth study found that the physician supply difference between a geographic area in the top quintile of intensity of medical care and the middle quintile is thirty-seven physicians per 100,000.³⁸

Sloan and Shadle attempted to replicate and expand upon the seminal Kessler and McClellan methodology to assess the impact of tort reform on utilization, separately testing the effects of "direct reforms"—measures, such as caps, that reduce the severity of an award—and "indirect reforms"—measures that enact other hurdles for plaintiffs to surmount.³⁹ They further broke down their analysis to separately assess expenditures on any hospitalization as well as on four types of episodes, as opposed to just the two types of episodes studied by Kessler and McClellan. They also expanded their scope to include all Medicare payments, not just Medicare Part A expenditures, and risk-adjusted patients.

Sloan and Shadle found no statistically significant reductions in Medicare expenditures for any category of patients in "direct reform" jurisdictions, but did find reductions in states with "indirect reforms," such as limits on plaintiff attorney contingency fees.⁴⁰ The authors were "reluctant to place much weight on this evidence," given that "prior studies have shown that damage caps are the single most effective tort reform . . . in terms of reductions in frequency and severity of malpractice claims . . . It seems more likely that the indirect reform variable is measuring something other than what they are designed to measure."⁴¹

In 1985, John Eisenberg argued that the claim that defensive medicine increases health care costs "probably serves only to oversimplify the complexity of medical decision-making."⁴²

The role of fee-for-service payment in overutilization of health care resources must be taken into account. The theoretical model of defensive medicine assumes demanding patients who will sue if the cost-ineffective measure is not taken and reluctant doctors who would prefer not to order an unwarranted diagnostic test or procedure. But in settings where there is insurance, patients demand the test because they do not bear its full cost. If patients must pay out-of-pocket for the test, doctors might very easily persuade them that the test is a waste of money.

Meanwhile, in fee-for-service settings, doctors may profit by providing the test or procedure. A Georgetown University study found that an increasing proportion of billing for advanced imaging in California comes from physicians who self-refer to equipment they own or have a financial interest in.⁴³ Unless doctors treat patients on a capitated basis, doctors have no financial incentive

not to order the test; forbearance may need to be motivated by something beyond their dismay that medical resources are being unnecessarily deployed.

A study by Macario et al. of preoperative electrocardiograms (ECGs) demonstrates some of the complexity involved in eliminating utilization of tests no longer thought to be medically necessary.⁴⁴ By the 1980s there was consensus that ECGs were not warranted in surgical patients younger than forty years of age who had no history of heart or circulatory system disease. According to Macario et al., by 1987 the rate of such tests had dropped below 10 percent. Macario and colleagues speculated that the small amount of continued testing may have been motivated by liability fears. But the main factor pushing down the use of unnecessary preoperative testing during the 1980s, they said, was not reduced pressure from the tort system but the fact that insurers were conducting utilization review.

RESEARCH METHOD

Laws capping malpractice damages were passed in ten states between 2002 and 2005, allowing a natural experiment for this study to determine whether an improved liability climate for doctors increased utilization or reduced health care expenditures attributable to defensive medicine.⁴⁵

Most of the hypothetical scenarios that posit purely defensive or assuring measures being taken involve diagnostic testing. For instance, scenarios developed by three medical specialty societies for the Office of Technology Assessment identified thirty-two actions doctors might order (for patients in Medicare-relevant populations) primarily for malpractice concerns.⁴⁶ Eight of them involved hospital admission or invasive procedures, but the remainder fell into five categories of tests: standard imaging, advanced imaging, laboratory tests, echography, or "other tests" (e.g., EKG or stress test). Baicker et al. found evidence that increased malpractice pressure was associated with increased imaging utilization.⁴⁷

For this reason, our dependent variable is growth in per-beneficiary Medicare spending for diagnostic, laboratory, and X-ray services (type-of-service categories 4 and 5). The difference-in-differences (DID) technique can be used for "quasi-experiments" when data is "available for the time period before and after the treatment for a group that does not receive the treatment but experiences some or all of the other influences that affect the treatment group."⁴⁸ As noted above, those other influences include the general trend in the United States over the past decade of imaging growth attributable to technological innovation, self-referral, and the like. DID analysis is said to "difference out" any other relevant fixed differences between states in both groups and the common time effect in all states. The source for the data on Medicare beneficiaries in the fifty U.S. states and the District of Columbia was the Dartmouth Atlas project.⁴⁹ The pre-test year was 2000 and post-test year was 2007.

PRINCIPAL FINDINGS

Table 1 summarizes the levels and changes in average per-beneficiary Medicare spending for the tort reform states and the status-quo states. Row 3 of the table presents the changes in average spending between 2000 and 2007. These entries are the changes between the averages for the pre-test and post-test periods. Row 4 presents the percentage change in means. Growth in expenditures was higher in the ten tort reform states relative to the rest of the United States (53.5 percent versus 41.8 percent). The relative gain, or “difference in differences,” was 11.7 percent, with a t statistic of -2.813 which was significant ($p < .01$).

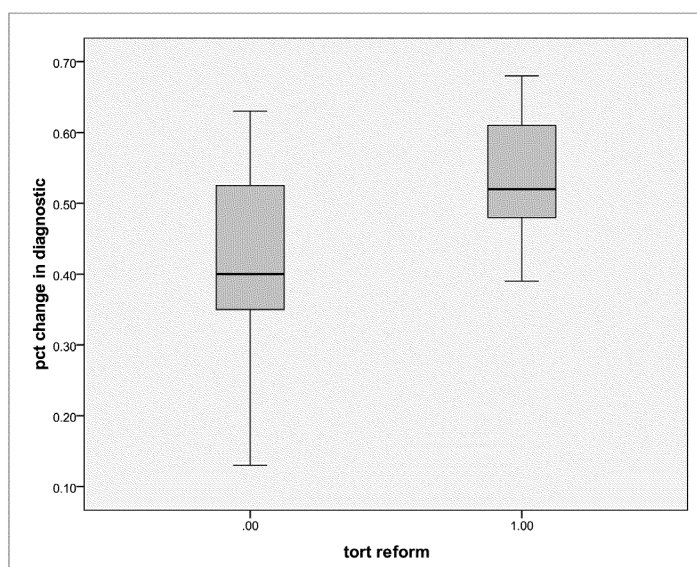
Figure 3 presents the distributions of spending growth in each category of states. Growth was highest in Texas, increasing from \$353 to \$593 per beneficiary, a change of 68 percent. In absolute terms, spending was highest in Florida at both the beginning and end of the study period. It rose 49 percent, from \$544 per beneficiary in 2000 to \$809 per beneficiary in 2007. Growth was lowest in North Dakota (13 percent) and Vermont (17 percent), which in 2007 also had the lowest spending tallies. A GAO analysis of 2006 data found that Florida physicians were paid the most for in-office imaging, \$472 per beneficiary, and Vermont physicians the least (\$62 per beneficiary).⁵⁰

Table 1: Diagnostic, Laboratory and X-Ray Expenditures By State⁵¹

	Control	Tort Reform	Difference
Before (2000)	\$290	\$329.40	\$39.40
After (2007)	\$415.56	\$503.10	\$87.44
Change in mean	\$125.56	\$173.70	\$48.14
Percent Change In mean	41.8 percent	53.5 percent	11.7 percent
Number Of states	40	10	

It will be noted that imaging use was already relatively high in the tort reform states by 2000. This suggests possible endogeneity—“policy choice is purposeful action and can rarely be treated as experimental data.”⁵³ Physicians who order more intensive imaging, either because they seek to safeguard their investment in equipment or because they perceive potential liability from misreading scans, may put more effort into lobbying their state legislatures for liability relief than their counterparts in states where imaging is used less. Potential underlying reasons for states to be hotbeds of imaging include behavioral offset from low reimbursements and freedom from certificate-of-need laws.

Figure 3: Distributions of spending growth in each category of states⁵²



Additional analysis of the relationship between physician prices and in-office imaging expenditures was conducted to identify any possible confounding effect of behavioral offset in low-price states. There is a tendency toward higher utilization in areas where prices for physician services are low, e.g., where there is high HMO penetration or physician practices have not consolidated.⁵⁴ Physicians in these states may be more likely to obtain an ownership interest in imaging equipment.⁵⁵ A variable controlling for this so-called “behavioral offset” was constructed by coding states where GAO found most markets in the lowest quartile of prices⁵⁶ as “low-price states.” This analysis found that, while increased volume of self-referral was associated with lower prices paid for physician services, this dynamic did not confound the tort reform effect—only three of the tort reform states were also low-price states.

Fourteen states had certificate of need (CON) laws covering CT, MRI and PET scanners.⁵⁷ Certificate of need laws require state agency approval to build or expand capacity and are intended to limit overutilization. Those states regulating advanced imaging were coded as “imaging CON states” for an analysis of variance. (Another nine states regulate one or two of the three.) CON was not a factor in dampening utilization; growth was approximately the same in CON and non-CON states. This finding is consistent with other studies.⁵⁸

Another source of potential endogeneity is social capital. Social capital refers to “networks, norms, and understandings that facilitate cooperative activities within and among groups of individuals”⁵⁹ and has been linked to numerous aspects of health and health care delivery.⁶⁰ As I have shown elsewhere, low social capital is related to higher utilization⁶¹ and also to litigiousness.⁶² To the extent that litigiousness is deemed a “problem” for legislatures to address or, for that matter, if high utilization is deemed a “problem” to be addressed by tort reform, tort reform laws would be more likely to be adopted in low-social capital states with high utilization. In fact, eight of the ten tort reform states score below the midpoint in the Putnam Social Capital Index; two others, Ohio and Missouri, are roughly at the

midpoint. The states with the lowest utilization, Vermont and North Dakota, are two of the nation's three highest social capital states. For this reason, while I am confident in concluding that damage caps do not reduce defensive medicine, I am less confident that damage caps were the cause of utilization growth in the tort reform states.

IMPLICATIONS FOR POLICY

Perhaps the greatest weakness in the defensive medicine thesis is its failure to specify the mechanism by which the reduction in malpractice pressure will reduce defensive testing.

John Eisenberg provided the conceptual foundation for analyzing physician decisions about utilization. He posited three main motivations underlying the doctor's thought process:

- The physician as self-interested practitioner: Physician seeks target income, pursues practice style convenient to him/her.
- The physician as the patient's agent: Physician performs clinical services in the interest of, or demanded by, the patient.
- The physician as guarantor of social good: Physician strives for efficiency and protection of the public.⁶³

The access thesis relies squarely upon the first motivation, income seeking. But a reduction in unnecessary utilization must harness the third motivation, which, like the second, is premised upon the physician's sense of professionalism. There are two problems here. First, policymakers are expecting a single policy intervention to promote two different and, in Eisenberg's view, colliding⁶⁴ physician motivations—and were expecting it to do so in a decade of "mounting financial pressures" noted by Pham et al.⁶⁵ during which physicians' role as "free agents"⁶⁶ predominated, with considerable investment in ancillary services.

The second is that interventions that appeal to professionalism usually have a strong element of information attached to them. Generally, these interventions seek to promote self-improvement by giving practitioners new knowledge,⁶⁷ as in the most basic such policy, the requirement of continuing professional education. Notable recent initiatives aimed at reducing utilization that include impartation of knowledge include:

- National Physicians' Alliance Good Stewardship Working Group: A report urging physicians to refrain from ordering imaging for lower back pain, and from ordering blood tests or ECGs in asymptomatic patients;⁶⁸
- A University of Miami experiment at Rhode Island Hospital: Weekly announcements of the previous week's blood testing costs to surgery staff saved \$55,000 over 3 months;⁶⁹
- CMS's program of providing physicians with confidential feedback on their level of resource use relative to peers;⁷⁰
- Quality measures for imaging efficiency.⁷¹

The first of these communicates detailed knowledge, gleaned from medical evidence, about utilization that is unnecessary. The latter three spur providers to think critically about their own practices and to acquaint or re-acquaint themselves with the medical evidence and/or best practices.

A classic policy intervention in support of professionalism is the peer review privilege. Peer review privilege protects from disclosure or liability actions taken, or information generated, during processes of peer supervision or the generation of knowledge for purposes of quality improvement. A common element of such privileges, such as those contained in the Patient Safety and Quality Improvement Act of 2005,⁷² is a very specific delineation of the privilege that tells providers exactly what type of quality improvement behavior the law wishes to encourage.

In contrast, an across-the-board cap on non-economic damages is nowhere near sufficient to tell a physician to, for instance, refrain from ordering imaging for lower back pain, nor to assure him or her that there will be no liability consequences for declining to do so.

In a report prepared for MedPAC, Kacharia, and Mello note without irony their "mixed findings. The weight of the evidence suggests that caps ... modestly improve physician supply, and reduce at least some defensive medical practices."⁷³

If it is possible for tort reform—or any other single, simple policy intervention, for that matter—to increase the number of physicians working and at the same time reduce their output in unnecessary utilization, the mechanics of such an achievement elude this observer. The idealized, reformed delivery system envisioned by many would indeed increase access while reducing utilization, but the access sought is more primary care practitioners (for which shortages have been forecast) and less intensive utilization would be targeted to the "flat of the curve." Achieving an appropriately balanced health care workforce and efficient resource use are highly complex tasks that will likely encompass alterations to payment policy, GME policy, health planning policy, and perhaps even changes to coverage or introduction of global payment schemes to Medicare.

It is somewhat surprising, given the volume of literature, that no researchers have commented on the fundamental contradiction between the rationales for the access and defensive medicine theses—particularly in light of the Kessler/Sage/Becker finding that increased physician supply is attributable to increased entries and decreased retirements, not from reshuffling of physicians among jurisdictions.⁷⁴ In part, this lack of theoretical coherence may reflect our ambivalence about the trade-off between access and cost; but it also represents a failure of health services researchers in the subfield of malpractice to integrate theory beyond their cone to encompass payment, market, and other relevant considerations. Likewise, researchers in other areas appear to be ignoring developments in the malpractice area, leaving policy in that area to be uninformed by other important trends.

CONCLUSION: POLICY INITIATIVES TO REDUCE DEFENSIVE MEDICINE

While the findings here cast doubt on the ability of traditional tort reform (i.e., caps on damages) to achieve cost containment, this should not be the end of policymakers' inquiry as to whether defensive medicine unnecessarily increases costs. As Eisenberg noted in his tripartite typology of the physicians' roles, in their role as guarantors of social good, physicians recognize "the constraints of society's limited resources."⁷⁵ A policy initiative that clearly addresses this role and avoids simultaneously harnessing physician's self-interest to increase utilization might succeed in reducing unnecessary testing. An example of such a narrowly tailored policy would be adoption of "safe harbors" from malpractice liability for declining to order tests under specified circumstances.⁷⁶ Such safe harbors would be evidence-based and targeted to scenarios where overuse of expensive or high-radiation exposure imaging is likely. They would communicate to physicians precise information about how to modify their practices and insulate them from liability accordingly.

An early form of this measure was implemented in Maine in the 1990s,⁷⁷ but preliminary findings indicated no decline in such supposed "defensive" practices such as Cesarean sections.⁷⁸ Florida conducted a similar pilot in the 1990s, which also failed to show reductions in utilization.⁷⁹ Since then the knowledge base for developing safe harbors has increased substantially.

The statute governing utilization review activities by Quality Improvement Organizations (QIO) appears to permit the QIOs to carve out safe harbors from liability.⁸⁰ CMS has finalized the *10th Statement of Work* for the QIO program. It will include a special project, bid separately from the fifty-one core state QIO contracts, to pilot a medical malpractice safe harbor program. This will involve one or more QIOs defining and adopting safe harbors from malpractice liability when a provider complies with relevant practice guidelines.

We should be under no illusions that safe harbors would be a panacea for curtailing the huge growth in imaging costs that has taken place over the past decade. First, there is the problem of inertia to overcome. Huesch and Richman, exploring defensive medicine from the opposite direction, determined that physicians who have recently been sued do not alter their practice patterns to increase treatment intensity and concluded that it is possible that provider practice patterns exhibit such persistence that even correctly perceived informative signals are not able to drive change rapidly enough. The extensive literature on small-area variations in physician behavior is consistent with highly persistent idiosyncratic physician behavior. Research on peer effects and key opinion leadership in healthcare delivery also suggests the difficulty of changing the practices of individual physicians.⁸¹

Second, there is the issue of financial incentives. Physicians with ownership interest in imaging equipment will still have an outsized incentive to order tests. Physicians in capitated practices, or whose resource use is measured by insurers, will still have the least incentive.

Some insurers have instituted utilization review or credentialing of physicians to curtail unnecessary imaging.⁸² Perhaps the purest test of the effectiveness of safe harbors would take place among salaried physicians in integrated delivery systems, which have little or no financial interest at stake. The QIO project should provide policymakers with a better estimate of the prevalence of defensive medicine and insights into whether it can be reduced.

¹ Peter P. Budetti & Teresa M. Waters, *MEDICAL MALPRACTICE LAW IN THE UNITED STATES* 2 (2005).

² *Id.*; see also David A. Hyman, *Medical Malpractice and the Tort System: What Do We Know and What (If Anything) Should We Do About It?*, 80 TEX. L. REV. 1639, 1642-43 (2002) (presenting the hard statistics relating to negligent injuries to patients).

³ See AM. MED. ASS'N, *MEDICAL LIABILITY REFORM NOW!: THE FACTS YOU NEED TO ADDRESS THE BROKEN MEDICAL LIABILITY SYSTEM* 3-11 (2012), <http://www.ama-assn.org/resources/doc/arc/mlr-now/pdf> (presenting statistics and costs associated with the "medical liability issue").

⁴ See Perry Beider & Stuart Hagen, *Limiting Tort Liability for Medical Malpractice*, CONG. BUDGET OFF. ECON. & BUDGET ISSUE BRIEF 1 (Jan. 8, 2004) (discussing malpractice liability, trends in malpractice insurance, and proposed solutions).

⁵ Sometimes it is explicitly stated. See Jim Copland, *The Tort Tax*, WALL ST. J., June 11, 2003, at A16, available at http://www.manhattan-institute.org/html/_wsj-the_tort_tax.htm.

⁶ James D. Gwartney, *Supply-Side Economics: The Concise Encyclopedia of Economics*, LIBR. ECON. & LIBERTY, <http://econlog.econlib.com/library/Enc/SupplySideEconomics.html> (last visited Mar. 3, 2012).

⁷ However, it is equally plausible that physicians might work less if less work is needed to meet target income. Eric Helland & Mark H. Showalter, *The Impact of Liability on the Physician Labor Market* 1 (RAND, Working Paper No. WR-384-ICJ, 2006).

⁸ David M. Studdert et al., *Defensive Medicine: Among High-Risk Specialist Physicians in a Volatile Malpractice Environment*, 293 JAMA 2609, 2609 (2005).

⁹ *Id.*

¹⁰ U.S. DEP'T OF HEALTH & HUMAN SERV., OFFICE OF THE ASSISTANT SEC'Y FOR PLANNING & EVALUATION, *CONFRONTING THE NEW HEALTH CARE CRISIS: IMPROVING HEALTH CARE QUALITY AND LOWERING COSTS BY FIXING OUT MEDICAL LIABILITY SYSTEM* 7 (2002), <http://aspe.hhs.gov/daltcp/reports/litrefm.pdf>.

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¹⁵ U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-03-836, *MEDICAL MALPRACTICE: IMPLICATIONS OF RISING PREMIUMS ON ACCESS TO HEALTH CARE* (2003).

- ¹⁶ Helland & Showalter, *supra* note 7, at 1.
- ¹⁷ “Volume” generally refers to the number of visits or procedures performed by a physician. “Intensity” generally refers to the amount of time spent with a patient or, in the case of “upcoding,” the amount of time the physician bills for.
- ¹⁸ See generally MEDICARE PAYMENT ADVISORY COMMITTEE, REPORT TO THE CONGRESS: MEDICARE PAYMENT POLICY 1 (2010) (noting that the more tests a physician runs, the more hours of labor done).
- ¹⁹ This is not to say that such a scenario is impossible; a large integrated delivery system facing high malpractice premiums could pay lower salaries to physicians or close its doors. However, this scenario was never reported or threatened during the tort reform debate, and would seem unlikely to face larger organizations with capital reserves and buying power in the liability insurance market.
- ²⁰ Mark A. Hall & Gail Agrawal, *The Impact of State Managed Care Liability Statutes*, 22 HEALTH AFF. 138 (2003).
- ²¹ Patricia Butler, *Key Characteristics of State Managed Care Organization Liability Laws: Current Status and Experience*, Henry J. Kaiser Foundation 6 (August 2001), <http://www.kff.org/insurance/loader.cfm?url=/commonspot/security/getfile.cfm&pageid=13845> (“Policymakers need to strike a balance between providing a fair enrollee grievance resolution process that can deter injuries or compensate injured victims without increasing the costs of both litigation and excess medical care that may result from greater access to the courts.”).
- ²² MEDICARE PAYMENT ADVISORY COMMISSION, REPORT TO THE CONGRESS: IMPROVING INCENTIVES IN THE MEDICARE PROGRAM AT 86 (June 2009).
- ²³ James Reschovsky et al., *Physician Ownership of Medical Equipment*, DATA BULLETIN No. 36 (DECEMBER 2010).
- ²⁴ PriceWaterhouseCoopers, *The Factors Fueling Rising Health Care Costs 2006 12* (2006), available at <http://www.uhia.net/web-storage/webstorage5/PwCCostOfHC2006.pdf>.
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- ²⁹ *Id.* at 2278.
- ³⁰ *Id.* at 2282.
- ³¹ *Id.*
- ³² Hellinger & Encinosa, *supra* note 14, at 1376.
- ³³ Assistant Secretary for Planning and Evaluation, *supra* note 11, at 7.
- ³⁴ CONG. BUDGET OFFICE, MEDICAL MALPRACTICE TORT LIMITS AND HEALTH CARE SPENDING 13 (2006), <http://www.cbo.gov/sites/default/files/cbofiles/ftpdocs/71xx/doc7174/04-28-medicalmalpractice.pdf>.
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- ³⁶ Hellinger & Encinosa, *supra* note 13, at 1379.
- ³⁷ Michelle M. Mello & Allen Kachalia, *Evaluation of Options for Medical Malpractice System Reform: A Study Conducted by Staff from the Harvard School of Public Health and the Harvard Medical School for the Medicare Payment Advisory Commission 7* (January 29, 2010), http://www.medpac.gov/documents/Apr10_MedicalMalpractice_CONTRACTOR.pdf.
- ³⁸ Brenda E. Sirovich et al., *Regional Variations in Health Care Intensity and Physician Perceptions of Quality of Care*, 144 ANNALS OF INTERNAL MED. 641, 647 (2006).
- ³⁹ An example of an “indirect reform” is a limit on attorney contingency fees that discourages attorneys from taking a malpractice case. Sloan & Shadle, *supra* note 13, at 483.
- ⁴⁰ *Id.* at 488.
- ⁴¹ *Id.* at 490.
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